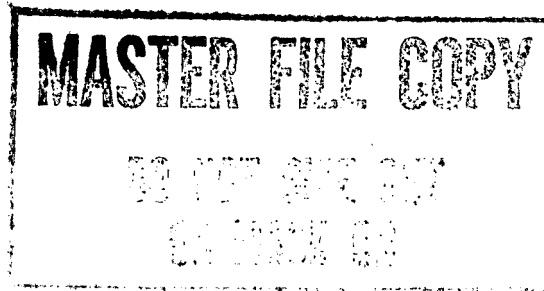




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The Oil Market: Impact of the OPEC Agreement



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The Oil Market: Impact of the OPEC Agreement

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An Intelligence Assessment

*Information available as of 12 April 1982
has been used in the preparation of this report.*

This assessment was prepared by [redacted] of
the Office of Global Issues and [redacted]
Office of Current Production and Analytic
Support. Comments and queries are welcome and may
be directed to the Chief, Energy Markets Branch,
OGI, [redacted]

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**The Oil Market:
Impact of the
OPEC Agreement**

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Key Judgments

Continued sluggish economic activity in the OECD countries has caused oil consumption to decline more rapidly than had been anticipated. As a result, oil use by non-Communist countries for 1982 will probably be under 45 million b/d—more than 1 million b/d below our original forecast in January. The drop in consumption has also placed considerable downward pressure on oil prices and forced OPEC members to adopt a production quota system to combat the price slide.

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OPEC success in defending nominal prices will depend on several factors:

On the demand side

- The duration of the present drawdown in excess inventories could keep demand for OPEC crude oil depressed at or below the quota of 17.5 million b/d for three to six months. Once the drawdown is complete, demand for OPEC oil should rebound by as much as 3-4 million b/d. Financially strained countries, including Nigeria, Indonesia, Venezuela, and Libya, should be able to increase sales to near-desired levels if at that time Saudi Arabia is willing to hold output at relatively low levels.
- The rapid decline in oil consumption may continue if economic recovery is delayed and conservation continues at a high level. Such developments would slow the inventory adjustment process.

On the supply side

- The willingness of OPEC members to adhere to production quotas, despite temptations to cheat because of domestic economic and political pressures, will speed the inventory adjustment process.
- The willingness of the Saudis to follow through on their oft-stated intention to cut output further if necessary will weigh heavily on preventing a price collapse.

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Because all OPEC members know that it is in their collective interest to hold the line on prices, we believe the cartel will take the necessary steps to prevent a price collapse unless the decline in demand for OPEC oil is much more severe and prolonged than expected. This would not preclude some countries like Nigeria from cutting prices to increase sales.

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Even if OPEC is largely successful in defending prices in 1982, an end to the Iran-Iraq war and the expected slow growth in oil consumption could increase downward price pressures on the oil market in 1983 and 1984. Demand for OPEC oil will probably increase to only 23-24 million b/d during this period even with strong economic growth. In that event, a new OPEC agreement to limit production may become necessary, particularly if Iran and Iraq attempt to raise output sharply.

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A substantial excess of productive capacity within the OPEC countries and surplus oil inventories in OECD countries will protect the market from all but a major supply disruption over the next year or two. Beyond then, the market could once again return to a period of vulnerability caused by oil supply disruptions:

- Oil-supply disruptions could occur rather frequently, as they have in the past.
- Oil-consuming countries remain highly dependent on oil supplies from the volatile Persian Gulf region.
- The liquidation of inventories in 1982 will remove the stock cushion that would help ease market pressures in the event of another supply cutoff.
- The decline in oil prices at least in real terms could spur oil consumption during the mid-1980s and erode surplus productive capacity.

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The Oil Market: Impact of the OPEC Agreement

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Recent Developments

The oil market has continued to weaken in recent months. Oil consumption has declined at a much faster pace than most forecasters expected, in part due to reduced economic activity. Consequently, oil company inventories remain far above desired levels.

Combined sales of key oil products in six major developed countries in January fell by more than 10 percent from year-earlier levels. US oil consumption fell 13 percent in January and dropped 5 percent in both February and March. France recorded the sharpest decline in oil sales, down 23 percent in January and 11 percent in February. In January, West Germany registered a 14-percent decline, Japanese consumption fell 10 percent, while Italy and the United Kingdom registered declines of 4 percent and 1 percent, respectively. The International Energy Agency estimates that oil consumption in the non-Communist world during the first quarter was 5 to 6 percent below year-earlier levels.

In addition to the recession and higher OPEC crude oil prices, several other factors have added to the decline in oil consumption in recent years:

- Rapid appreciation of the dollar versus other currencies in 1980 and 1981 has pushed oil costs up in foreign countries faster than energy prices (figure 1). Since October, dollar appreciation has raised the market cost of crude by the equivalent of \$4 for France and Italy, almost \$2 for Japan, and \$1 for West Germany. (Crude oil prices are denominated in dollars.)
- Loosening of controls on product oil prices in some foreign countries and decontrol of crude and product prices in the United States.
- Several foreign countries have raised the tax on key petroleum products.

Lower oil consumption has continued to force reductions in production. Total OPEC oil production, including 1 million b/d of natural gas liquids, fell from more than 22 million b/d during January to an estimated 20 million b/d in March. Non-OPEC production, including net Communist imports, has remained at about 22.5 million b/d.

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We tentatively estimate that inventories, including floating storage, declined by about 3 million b/d during the first quarter, approximating the normal seasonal rate. As a result, total non-Communist inventories at the end of the first quarter remained 300-500 million barrels above normal despite oil company efforts to pare excess stocks because of high carrying costs and prospects of falling real oil prices.

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Downward Price Pressures

Market conditions have put downward pressure on prices in recent months. Spot market prices have fallen sharply since mid-January. Spot prices for Arab Light crude declined from about \$34.50 to \$28 to \$29 per barrel by mid-March. African Light crudes have declined \$7 to \$8 per barrel since early January on the spot market, while heavy crudes declined by \$4 to \$5 per barrel.

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Since the last round of price revisions at the beginning of 1982, the slump in spot prices and sluggish oil demand caused several producers to lower official prices:

- Iran cut prices three times in February, reducing its official sales price to \$4 per barrel below the OPEC benchmark. So far, this has been the only serious departure from the agreed OPEC price structure.
- Venezuela dropped the price of its heavy crudes—those with an API gravity of 19 degrees or less—by \$2.50 per barrel.
- Mexico cut its average official price by \$2 per barrel.

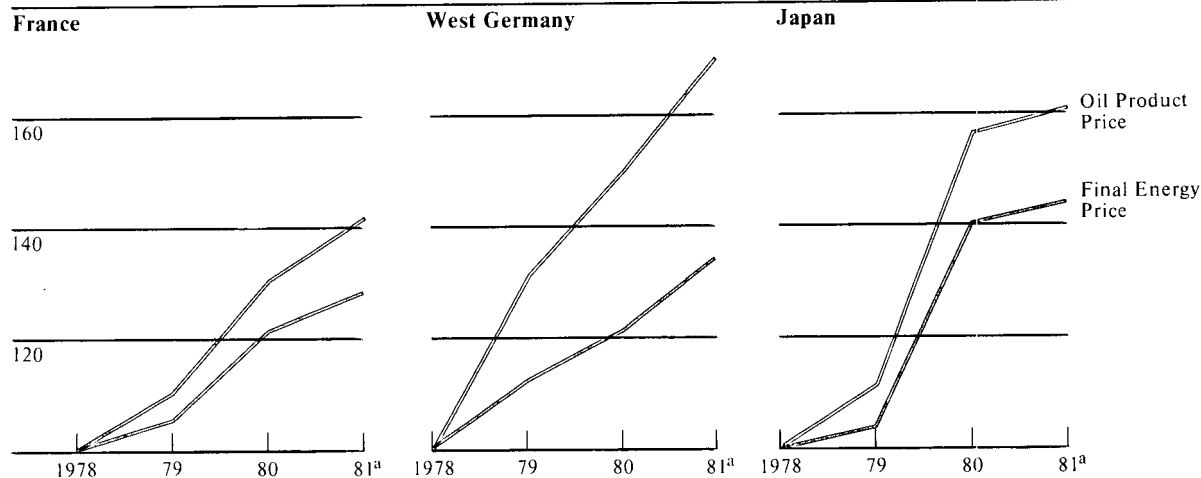
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Figure 1

Real Oil and Energy Price Trends in Selected Foreign Countries

Index 1978=100

^a Estimated.

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- British North Sea crude prices have been cut a total of \$5.50 per barrel and are now priced as much as \$4.50 below comparable African OPEC crudes.
- Norway has cut prices by as much as \$5.75 per barrel, matching the British reductions.
- Egypt has cut the price of Suez Blend by \$2 per barrel since the beginning of the year. Lower quality crudes have been cut by as much as \$2.85.
- The USSR reportedly has reduced prices by as much as \$4 per barrel.

The OPEC Vienna Agreement

The pronounced decline in oil prices in recent weeks and the continued slump in demand forced OPEC members to call an emergency meeting in March to prevent a collapse of their nominal price structure. Two weeks prior to the Vienna meeting, behind-the-scenes negotiations by several oil ministers laid the framework for a production-sharing scheme that would limit OPEC crude output to 18.5 million b/d. Negotiations were expected to be difficult, and many observers believed that OPEC would be unable to agree on a first-ever production-sharing mechanism.

OPEC members not only succeeded in reaching an accord on production quotas in Vienna but also agreed on an even larger production cut than had been anticipated. The members agreed to limit collective crude output to 18 million b/d, including 7.5 million b/d from Saudi Arabia. Riyadh, in keeping with its longstanding policy that production decisions are the exclusive right of each country, made a separate announcement of an additional 500,000-b/d production cut. The new OPEC crude oil ceiling of 17.5 million b/d will lower the recent production level by about 1.6 million b/d if strictly enforced. To this end, the conference appointed a monitoring committee to make inspections and to report any violations to the scheduled ministerial meeting in May. The committee was also empowered to call an extraordinary meeting if the situation warrants.

The agreement also allows the producers to cut prices for their higher quality crudes by up to \$1.50 per barrel. The action still leaves African crudes about

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\$4.50 per barrel higher than similar quality North Sea crudes. OPEC plans to send representatives to some non-OPEC producers to discuss the results of the meeting and encourage these exporters to maintain prices. At the new April production ceilings and given recent price cuts, the OPEC average official sales price will fall to about \$33.60 per barrel from \$34.29 per barrel in January

Impact of the Agreement

The immediate impact of the agreement likely will be the prevention of a further slide in oil prices. Because the OPEC action took most market observers by surprise, the market is likely to stabilize for the next

month or so. Still, several factors suggest prices may come under more downward pressure later in the spring:

- There is no end in sight to the present sluggishness in economic growth.
- Conservation and substitution practices have become ingrained.
- Inventories remain well above desired levels, and company attempts to pare stocks rapidly could bring added pressure on prices or keep demand for OPEC crude depressed at 17.5 million b/d well beyond midyear.

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Table 2

Million b/d

Non-Communist Oil Supply and Demand Base Case ^a

	1981	1982				
		I ^b	II	III	IV	Year
Normal inventory pattern						
Consumption	46.3	46.7	43.3	43.0	46.5	44.8
Inventory change ^c	−1.0	−3.3	1.6	2.7	−1.1	−0.1
Supply	45.3	43.4	44.9	45.7	45.4	44.7
Non-OPEC	21.8	22.4	22.5	22.7	22.7	22.5
OPEC ^d	23.5	21.0	22.4	23.0	22.7	22.2
Inventory adjustment						
Estimated inventory adjustment						−0.8 to −1.4
Implied demand for OPEC oil						20.9 to 21.5

^a Assumes 1-percent OECD economic growth in 1982.^b Estimated.^c Normal inventory pattern from second quarter-fourth quarter including 100,000-b/d increase in government-owned stocks.^d Including natural gas liquids.

- The longer demand remains depressed, the greater is the likelihood that some members will cheat on the agreement. Non-OPEC producers have at least 300,000 b/d in surplus capacity at this time and have been aggressive in cutting prices.

1982 oil consumption. To accommodate the possibility of growing repercussions from US recessionary pressures, the high interest rates, and the continued high rates of conservation due to structural changes in energy use, we have also considered a low case where non-Communist consumption is about 44 million b/d, roughly 800,000 b/d below the base case.

Outlook for the Balance of 1982

Consumption Outlook

Sluggish economic growth and continued conservation and substitution is expected to hold non-Communist oil consumption in 1982 to under 45 million b/d, about 3 percent below year-earlier levels (table 2). Although the 1982 economic outlook continues to be clouded by uncertainty, the downturn in the US economy and high interest rates have led a number of forecasters to lower their projections of 1982 OECD economic growth to 1 percent. This lower growth forecast was the primary factor causing a reduction of more than 1 million b/d from our January estimate of

In our base case, a sharp decline in OECD consumption is only partly offset by increases in LDC oil use. The bulk of the growth in LDC oil consumption occurs in OPEC and other oil-producing states like Mexico.

While the effects of past price increases continue to spur conservation, we assume in our base case that efficiency gains will slow during the remainder of the year because of the erosion in real and even nominal oil prices. Moreover, the expected recovery in industrial output later in the year may spur utilization of

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Retail oil product prices are beginning to reflect the fall in crude prices. Retail gasoline prices, for example, have fallen in all major countries since January in response to the soft oil market. In some countries this is the first drop in two decades. Between January and March, prices in the United States have declined

13 cents per gallon while declines in foreign countries ranged from 3 cents in France to 22 cents per gallon in West Germany. Italy and the United Kingdom have taken advantage of declining retail prices by recently announcing plans to increase gasoline taxes. [REDACTED]

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**Major Developed Countries:
Gasoline Price Trends**

US Cents Per Gallon

		France	West Germany	Italy	United Kingdom	United States	Japan
Retail gasoline price							
1981	June	231	233	256	209	132	249
1982	January	254	227	284	230	129	260
	March	251	205	269	214	116 ^a	
Tax							
1981	June	120	108	157	115	14	86
1982	January	135	106	170	118	14	86
	March	135	105	171	127	14	

^a Estimated.

older and less efficient equipment and encourage rebuilding in industrial oil stocks. Nonoil energy supplies are expected to continue to rise as nuclear energy and coal meet increased needs in electricity generation. [REDACTED]

Because of the expected economic recovery and a slowdown in efficiency gains, we assume under our base case that the rate of decline in oil consumption will moderate during the remaining three quarters. Under our alternative low-consumption case, the rate of decline in oil use will continue at recent rates over the next two quarters before moderating slightly in the fourth quarter. [REDACTED]

The Inventory Overhang

Non-Communist Oil Stocks. A one- to two-quarter time lag in reporting of inventory data causes a great deal of uncertainty about current oil stock levels and the amount considered surplus. [REDACTED]

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Most oil stocks are working inventories needed to ensure the smooth operation of the distribution system. Based on consumption trends and working inventory requirements, some 300-500 million barrels of yearend 1981 stocks were considered excess³—an amount equal to six to 11 days of forward consumption. [REDACTED]

Because of seasonal fluctuations in the level of oil consumption, non-Communist primary oil stocks are normally accumulated during the spring and summer months (figure 2). The buildup is usually about 1.5 million b/d during the second quarter and approximately 2.5 million b/d during the third quarter. These stocks are then depleted during the fall and winter to meet peak consumption needs. The drawdown is normally about 1.0 million b/d during the fourth quarter and about 3.0 million during the first quarter. [REDACTED]

We estimate primary stocks¹ on land totaled about 4.3-4.4 billion barrels at end of 1981—about 93 days of forward consumption (table 4). In addition, an estimated 800 million barrels were in tankers offshore or en route to consuming countries. These stock estimates do not include oil held at the wholesale and retail level. [REDACTED]

Reliable data on secondary and tertiary stock levels² are not available. A recent study estimates US storage capacity of gasoline and distillate fuel oil at 500 million barrels. If the estimate is accurate and is representative of secondary and tertiary stock levels elsewhere, the total capacity of non-Communist countries is probably on the order of 2.5-3 billion barrels. Market watchers speculate that secondary and tertiary destockings were partly responsible for the sharp consumption declines last year. If this is the case, remaining surplus stocks at this level are probably small. Indeed, the recession has probably led this sector to pare excess stocks to perhaps even below normal levels. [REDACTED]

¹ Primary stocks include crude oil products and unfinished oils held in refinery tanks, bulk terminals, pipeline tankages, barges, intra-coastal tankers in ports, inland ship bunkers, and large consumer inventories as required by law or otherwise controlled by government. [REDACTED]

² Stocks held by the secondary distribution system such as gasoline stations and consumers, including most of industry. [REDACTED]

Stock Depletion. Oil companies will attempt to unload excess stocks for several reasons:

- Companies generally view the market as weak with flat or declining prices over the next few months.
- Inventory carrying costs are high at current interest rates. Interest costs alone for storing a barrel of crude oil for a year are about \$5 to \$6. Given the projected size of the excess, total finance costs amount to \$1.5-2.5 billion annually.
- Cash flow problems in some companies and depressed profits in the refining sector dictate a move to liquidate excess inventories.
- Because several OPEC members are producing below desired levels, inventory managers view this surplus capacity as a cushion to be tapped for future supply needs. [REDACTED]

³ We calculated normal inventories using an equation derived from the historical (1973-78) relationship among oil stocks, oil consumption, and oil prices. Our model indicates stocks stood at some 300 million barrels above normal at yearend 1981. [REDACTED]

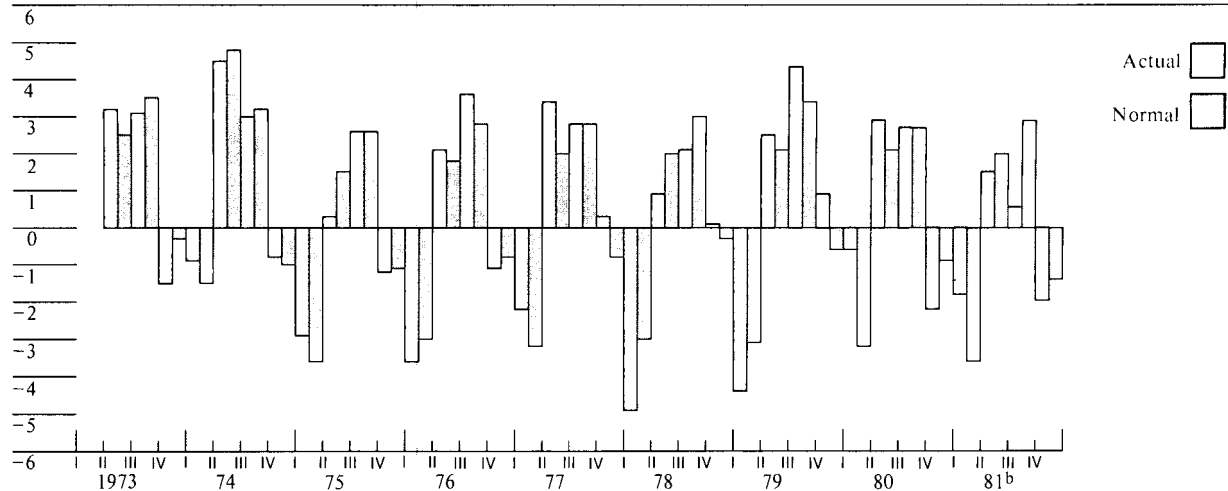
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Figure 2

Rate of Adjustment for Non-Communist Primary Oil Stocks^a

Million b/d

^a Includes changes in government-owned stockpiles.^b Estimated.

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Table 4

Non-Communist Primary Oil Stocks
on Land, End of Period^a

	Billion Barrels				Days Forward Consumption			
	I	II	III	IV	I	II	III	IV
1978	3.6	3.7	3.9	3.9	74	76	74	69
1979	3.5	3.7	4.1	4.2	70	76	79	80
1980	4.2	4.4	4.6	4.5	87	94	93	90
1981	4.3	4.4	4.5	4.3-4.4 ^b	96	100	97	93

^a Estimates include government-owned stocks in Japan and the United States that have increased from 18 million barrels in first-quarter 1978 to 299 million barrels at the end of fourth-quarter 1981. The increase amounts to about six days of forward consumption.

^b Estimated.

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Despite sharp production cuts, lower-than-expected consumption levels have undercut oil industry efforts to trim excess inventories. Companies made some progress in reducing stocks during the third quarter of last year. The decline in consumption accelerated again during fourth-quarter 1981 and first-quarter 1982, hampering company efforts to destock. As a result, stocks are still some 300-500 million barrels above normal levels. The prospect of falling prices may cause buyers to allow stocks to fall below normal historical levels, particularly if stockholders underestimate near-term oil consumption. []

Implications for the Demand for OPEC Crude Oil

The expected inventory adjustment process during the remainder of this year will play a key role in determining near-term market conditions. The pace and duration of this process is uncertain. Given estimated consumption levels, maintenance of the production quotas agreed to at the OPEC meeting would allow for a rapid rate of destocking, perhaps resulting in a net drawdown of 3-4 million b/d. At this rate, excess stocks would be depleted within three to six months (table 5). Once this destocking is over and inventory patterns return to normal, demand for OPEC crude oil could rebound by as much as 3-4 million b/d, to about 20.5-21.5 million b/d or 21.5-22.5 million b/d, including natural gas liquids production. As oil demand rises, the recent adjustments to price differentials should allow countries facing financial strains, such as Nigeria, Indonesia, and Libya, to increase sales. []

Companies may opt for a faster drawdown rate. This, in turn, would force OPEC crude output below the 17.5 million b/d agreed on in Vienna. In this case, however, the demand for OPEC oil would rebound sooner. []

Table 5

Million b/d

OPEC: Impact of Inventory Adjustment on Production ^a

	1982		
	II	III	IV
Normal stock charge	1.6	2.7	-1.1
Non-OPEC supplies	22.5	22.7	22.7
Base-Case Consumption	43.3	43.0	46.5
300-million-barrel adjustment			
Stock charge	-1.7	2.7	-1.1
Demand for OPEC oil	19.1	23.0	22.7
500-million-barrel adjustment			
Stock charge	-2.3	1.1	-1.1
Demand for OPEC oil	18.5	21.4	22.7
Low Consumption	42.3	42.0	45.5
300-million-barrel adjustment			
Stock charge	-1.3	2.3	-1.1
Demand for OPEC oil	18.5	21.6	21.7
500-million-barrel adjustment			
Stock charge	-1.3	0.1	-1.1
Demand for OPEC oil	18.5	19.4	21.7

^a Assumes OPEC production, including natural gas liquids of 1 million b/d, remains at Vienna quotas until inventory adjustment is completed.

[]

Nigeria is already experiencing financial difficulties and is under pressure to cut prices. Nigerian output has fallen sharply since the Vienna meeting, reflecting in part some companies' attempts to work off excess inventories. Moreover, a substantial share of Nigerian sales are third-party sales. These purchasers have no equity interest in Nigeria and have been able to renege on short notice. []

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Still, OPEC members probably will be successful in their defense of nominal oil prices. Because all OPEC members realize that even sizable price reductions are unlikely to revive overall demand for oil in the near term, most will continue to try to refrain from cutting prices. OPEC countries with strong financial reserves probably can dip into their assets, if necessary, to preserve the current pricing structure. Some members have even indicated a willingness to help the more financially needy producers, such as Nigeria, through loans. Moreover, Saudi Arabia, Kuwait, and the UAE have indicated publicly their resolve to cut output further to defend the \$34 benchmark price. As long as other producers do not cheat excessively on their present quotas, and price cutting does not become widespread, further production cuts from the Gulf producers should be successful in underpinning nominal prices for the remainder of this year. []

Price Collapse Scenario

Under a less likely but not implausible scenario, cheating on production quotas, combined with continued sharp declines in consumption and aggressive attempts by companies to pare excess inventories, could cause oil prices to tumble. Indeed, cracks could develop in the production-sharing scheme almost immediately if such countries as Libya, Iran, Iraq, and Nigeria attempt to boost sales or have difficulty reaching their quotas. Under these circumstances, Saudi Arabia could be forced to sharply cut its production to a level that Riyadh might find unacceptable, leaving OPEC with no choice but to lower nominal prices. Should widespread price cutting break out, we cannot predict where the slide would stop. []

Beyond 1982

Even with a fairly rapid economic expansion in 1983 and 1984, the oil market will likely remain soft. Indeed, even if OPEC is successful in preventing a price slide through the remainder of this year, the cartel may continually be faced with the task of allocating production to prevent a nominal price decline. []

Oil consumption will probably increase only moderately, perhaps by 1-2 million b/d or so from 1982 to 1984⁴ even with strong economic growth. Improved energy efficiency and growing coal use will offset some of the expected increase in demand for oil resulting from strong economic growth. Oil is a swing fuel, however, and demand could rise faster than we expect. In any case, with relatively stable non-OPEC supplies in 1983 and 1984, demand for OPEC oil will probably increase to only about 23-24 million b/d in 1984. []

At this relatively low level of demand, some OPEC members will be under pressure to increase revenues. In addition, should the war between Iran and Iraq end and the countries increase output significantly, production rationing problems would continue for OPEC. As a result, OPEC members could be under even greater pressures to prevent a nominal price collapse. []

Should nominal oil prices fall sharply over the next two years, oil consumption would rebound more rapidly as conservation, fuel switching, and energy-related capital investment slow. A price decline to \$20 per barrel, for example, would cut the OECD inflation rate by about 5 percentage points and add 2.5 percentage points to the economic growth rate within a year. The resulting increase in economic growth would boost oil consumption sufficiently to tighten the oil market within two to three years. []

Market Vulnerabilities

The present excess in productive capacity will protect the market from all but a major supply disruption, such as a shutdown of Saudi production, for the next

⁴ Assumptions for 1983 and 1984 include:

- Annual GNP growth of 3.5 percent in the OECD.
- Continued slight decline in the energy-GNP ratio.
- Constant nominal prices in 1983 and 1984.
- Increases in nonoil supplies averaging 1.6 million b/d annually, mainly coal and natural gas and mostly in the United States and Europe. []

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year or two. Beyond then, several factors point to a return toward a period of increased vulnerability to oil supply disruptions:

- A review of past supply disruptions suggests that such events occur rather frequently. Since 1950 oil supplies from major oil-exporting countries have been interrupted for nonmarket reasons on 13 different occasions.
- Oil-consuming countries still remain highly dependent on imported oil, especially from the politically volatile and unstable Persian Gulf region.
- As long as the war continues, the supply outlook in Iran and Iraq remains uncertain and the potential exists for spreading the supply disruption to other regions in the Persian Gulf.
- The expected inventory drawdown will remove the buffer of oil stocks that effectively prohibited a price runup at the outbreak of the Iran-Iraq war.
- Forecasters have had limited success predicting oil conservation and consumption trends during the past few years. Given the likelihood of a decline in real oil prices, predicting future trends will be difficult. At a minimum, weak oil prices could slow conservation and fuel-switching efforts, leading to a sharper upturn in oil demand during the mid-1980s.

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